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VOLUME 3 WASHINGTON, FEBRUARY 1, 1942 NUMBER 3

CAA Spring Pilot Training Aimed at Aiding Army, Navy

Changes Made in Line With War Program

Further coordinated with the requirements of the armed forces of the Nation, the spring program of C. A. A. pilot training starts February 1, it was announced by Charles I. Stanton, Acting Administrator of the Civil Aeronautics Administration.

Major changes in student requirements, in line with the total war program, include dropping the age limit of applicants from 19 to 18, accepting of married men if their dependents have other means of support, and the signing of an affidavit by all applicants that they will, at the completion of their course, make application to join an armed air service or, if preferable to the armed forces, will take an advanced C. A. A. flying course.

Same Scope

The program as now outlined will have approximately the same scope as the last two sessions, Mr. Stanton stated. A total of 540 college units, 85 noncollege, and some 700 flight operators will participate. The program calls for the training of 8,850 elementary fliers and 3,000 secondaries. Some 4,500 instructors and cross-country and ferrying pilots also will be completed through the various advanced courses during the fiscal year.

Rising costs of materials, the need for 24-hour guards at airports, and incidentals have resulted in the raising of fees paid to flight operators $1 an hour. C. A. A. will also pay for physical examinations, already in line with military requirements, and for insurance of the students during their flight courses.

Secondary courses will be given in 215 centers.

Text of Affidavit

The affidavit which all students will be required to sign is as follows:

"I am a male citizen of the United States.

"If not now enlisted in the Naval Air Reserve I agree, upon completion of the Civilian Pilot Training course of which I am an applicant, to immediately apply for further aviation training in the armed air forces for at least the

(*See* PILOT TRAINING, *page 43*)

Special Notice

Beginning with this issue the Civil Aeronautics Journal will publish monthly a new department—a feature page devoted to a discussion of airport management problems. The first of these new feature pages can be found in this issue on page 36, and will appear thereafter in every other issue of the Journal.

Artillery Plans Own Air Force

Pilot-mechanics for light planes for use in artillery observation are being trained by the Field Artillery and the Civil Aeronautics Administration in an experimental program which started at Fort Sill, Okla., January 13.

The school is using Air Corps "putt-putts" which featured the Army maneuvers last summer, with Col. W. W. Ford, himself a pilot, in direct charge of the program, being directed by Brig. Gen. George R. Allin, Commandant of the Field Artillery Training School. The first class consists of a group of Field Artillery officers and enlisted men, 90 percent of whom are graduates of recent C. C. A. pilot training courses.

Cooperative Venture

The training is literally a cooperative venture between government and civilian agencies. There are six civilian instructors in flying and ground school subjects, including four selected by the C. A. A. from pilot-training schools and two who took part in the Army maneuvers last year in connection with the light plane tests. Richard Alley, Assistant Chief of the Flight Section of the C. A. A. Pilot Training Program, and Stanley Stelle, Assistant Chief of the Maintenance Section, will supervise and assist in preparation of special texts on flying and ground school subjects. In addition, the Piper Aircraft Company has contributed the services of one man to teach airplane maintenance and the Continental Engine Company has contributed an engine expert as instructor.

(*See* ARTILLERY, *page 43*)

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Pogue Appointed C.A.B. Chairman

L. Welch Pogue, formerly General Counsel, has been appointed chairman of the Civil Aeronautics Board.

President Roosevelt nominated Mr. Pogue to fill the vacancy on the Board caused by the expiration of the term of G. Grant Mason, Jr., who has taken the position of consultant to the Defense Supplies Corporation, Latin American Republics Aviation. Mr. Pogue's nomination was confirmed by the Senate on January 9. After Mr. Pogue took the oath of office, it was announced that President Roosevelt had appointed him Board chairman.

Meanwhile George Pierce Baker had been named as vice chairman of the Board and also liaison officer to represent the Board in its relations with the new Office of Defense Transportation.

Mr. Baker came to the Board on August 14, 1940, from Harvard University where he had been associate professor of transportation. His degrees include A. B., 1925; A. M., 1930; Ph. D., 1934, all from Harvard.

Mr. Pogue holds a degree of doctor of juridicial science from Harvard Law School (1927). He is a graduate of the University of Nebraska (A. B.) and took his law degree (LL. B.) at the University of Michigan in 1926. Following 8 years of legal practice he was appointed as Assistant General Counsel of the Civil Aeronautics Authority upon its formation in 1938. In the summer of 1939, Mr. Pogue was unanimously chosen as General Counsel.

New Aeronautical Publications

Among recent Government publications dealing with the subject of aeronautics are the following:

AMERICAN AIR ALMANAC; 1942, January–April. 1941. 240 pages; provides in convenient form the astronomical data required for aerial navigation. Price $1.00. Classification No. N 11.6/3: 942/1.

INSTRUCTIONS FOR AIRWAY METEOROLOGICAL SERVICE; fifth edition, 1941 (Weather Bureau, Circular N). 201 pages, illustrated. Price 65 cents. Relates to organization and administration, observations, forecasts and analyses, and instruments. Classification No. C 30.4: N/941.

ARMY BASIC FIELD MANUAL 21–26; advanced map and aerial photograph reading. 1941. This manual supersedes TM 2180–5, Sept. 28, 1938. 190 pages, illustrated. Price 20 cents. Classification No. W 1.33: 21–26.

When ordering these publications, send remittance by postal money order, express order, coupons, or check to the Superintendent of Documents, Government Printing Office, Washington, D. C. Always give title, issuing office, or classification number when listed.

—Keep 'Em Flying—

C. A. A. on 44-Hour Week

Effective January 19, the Department of Commerce, including the Civil Aeronautics Administration, placed all employees, both in Washington and in the field service, on a 44-hour work-week.

A most important consideration in the granting of a pilot's certificate is physical fitness. Through its examination of thousands of pilot applicants each year, therefore, the Civil Aeronautics Administration's Aviation Medical Division plays a major role in the maintenance of air safety.

This Division, whose Washington staff includes 6 physicians specializing in various phases of medicine, has supervision over about 1,400 medical examiners throughout the country. During 1941 about 172,000 original and renewal physical examinations were conducted.

Many problems arise in the examination of so large a group. Some of these are quite complex and require extensive study. Facilities for such study and experimentation are provided in a medical laboratory in Washington.

The laboratory is not used for original research in aviation medicine. Rather, it acts as a service-testing point to try out and adapt to practical usage information derived from original research elsewhere.

Whether a new idea or proposal comes from a field examiner or from some other source, it is subjected to a series of systematic service tests. These are designed to prove its practical value in determining and maintaining improved physical standards for pilots.

As mechanical improvements bring about changes in aircraft performance, the Medical Division must judge the probable effect of these changes on the physical requirements of pilots. The medical officers must be aware of new trends that might lead to changes in regulations, and they must be ready to recommend corresponding changes in examination standards.

Another responsibility of the Medical Division is the testing of new equipment or processes. An example of this is the trying out of a new color-vision test. Whereas the standard test for color blindness is the selection of colors, on the printed page, in colored yarns, or in colored lights, the new test, devised by a field examiner in Ohio, is based on the production of an after-image. The effect of these tests may be far-reaching. As a result of the laboratory studies recommendations may be considered for new types of lenses in airport signal lights or for new types of goggles to be used by pilots with some degree of color blindness. Similar tests along other lines are continually being conducted to promote safety in flying.

Important Defense Measures Mark Board's 1941 Record

Air Carrier Service Routes Extended

Extension and speeding up of air-carrier service routes both at home and abroad, in the interests of the national defense, and promulgation of important defense safety regulations keynoted its work during 1941, the Civil Aeronautics Board said in a year-end summary.

Approval on the basis of a temporary certificate was given to Pan American Airways, Inc., for the opening of an air route across the South Atlantic between Miami, Fla., and Leopoldville, Africa, via Belem and Natal, Brazil; and other extensions granted on the Pacific and into Canada. United States flag lines in Latin America were materially increased in number and time schedules were cut, as the Board worked in cooperation with countries there to eliminate Axis-controlled air carriers.

Extensions Authorized

In these connections, the Board authorized extensions of Pan American Airways Pacific routes between the original points San Francisco, Calif., and Manila, P. I., to Singapore, Straits Settlements, for a 5-year period; amended the San Francisco-Auckland route to include a stop at Suva, British Crown Colony of Fiji; authorized acquisition of control of Pan American Airways-Africa, Ltd., and Pan American Air Ferries, Inc., by Pan American Airways, Inc., to assist the movement of ferry aircraft between the United States and the Middle East; authorized Pan American Grace Airways, Inc., to operate a weekly nonstop service between Cali, Colombia, and Guayaquil, Ecuador, and another between Talara and Lima, Peru.

When Peru took over Lufthansa Peru and Bolivia eliminated Lloyd Aero Boliviana, Panagra was immediately authorized to begin operations along a new transcontinental route extending from Lima, Peru, via Cochabamba, Sucre, Vallegrande, Santa Cruz, Concepcion, San Ignacio, San Jose, Robore, and Puerto Suarez, Bolivia, and Corumba, Brazil, where it made contact in September with a new extension of Panair do Brazil which carried the service on to Rio de Janeiro.

Local Operating Rights

American Airlines, Inc., was granted local operating rights between Toronto, Canada, and Buffalo, N. Y., between Windsor, Canada, and Niagara Falls, N. Y.; and Western Air Lines, Inc., was granted service between Great Falls, Mont., and Lethbridge, Alberta, Canada, where it connects with the interior Canadian route to White Horse, Yukon Territory, and so with Pan American Airway's route into Alaska.

Foreign air carrier permits were granted to Cia Mexicana de Aviacion, S. A., affiliated with Pan American Airways, Inc., allowing it to continue service between Los Angeles, Calif., and Mexico City, Mexico; and to Trans Canada Air Lines for nonstop service between Toronto, Canada, and New York, N. Y. The Trans Canada decision stemmed from the principles of reciprocity, set up in the Canadian-American Air Transport Arrangement of 1939.

Route Mileage Increased

Certificates and amendments to certificates inaugurated more than 8,000 miles of new routes and route extensions, both domestic and foreign. Because of this large increase in route mileage, tariff filings jumped over 225 percent over those of the previous year and there was a substantial addition in the number of operating schedule filings, which reflected the expansion in the number of local and nonstop flights by the carriers.

Immediately following the declaration of war, the Board suspended hearings and prehearing conferences on pending new-route applications with the exception of those important to national defense. Rate cases are being continued, however, with plans under development for shortening the procedure in order that "the immediate and maximum attention of the carriers and their personnel and of the Board and other Government agencies concerned may be available for emergency demands." (See announcement of new procedure, p. 34.)

Regulations Issued

Working closely with the Army and Navy as the great growth in military flying developed new problems, the Board issued the following important safety and defense regulations:

1. Requiring all aircraft of over 10,000 pounds gross weight to be equipped after January 1, 1942, with an altitude-recording device.

2. Following recommendations of the Interdepartmental Air Traffic Control Committee composed of representatives of the Army, Navy, Civil Aeronautics Administration, and the Board, regulations were promulgated for traffic control to facilitate movement of military aircraft and ensure safety on the Federal Airways; i. e., all aircraft operating without two-way radio and a sensitive altimeter must fly below 3,500 feet altitude; specified altitudes must be maintained by all craft flying between 3,500 and 17,000 feet; flight plans must be filed if a flight is contemplated through a United States Airways Traffic Control Center; all altitudes above 17,000 feet were reserved to military aircraft alone, except specially authorized commercial operations or civil flights for aeronautical development.

Penalties Imposed

3. Imposition of prompt and severe penalties for pilots violating regulations covering restricted areas.

4. Federal certification of all planes and pilots.

5. Requirements of identification of pilots and planes; of filing of plans for all flights; examination of pilot identification by owners of planes before permission to use is granted; clearance for flights by police officers or other qualified representatives; sealing of cameras car-

(See BOARD RECORD, *page 43*)

Connolly Resigns As C. A. A. Head

Brig. Gen. Donald H. Connolly, U. S. A., who for the past 18 months has been Administrator of Civil Aeronautics, resigned effective January 15 to return to active duty in the Army, it has been announced by Robert H. Hinckley, Assistant Secretary of Commerce for Air.

Mr. Hinckley said Charles I. Stanton, the present Deputy Administrator, would serve as Acting Administrator, effective on the same date.

"Fortunately for us," Mr. Hinckley said, "General Connolly's services will not be completely lost to us for at least a few more months. I am advised by Lt. Gen. H. H. Arnold that he has named General Connolly on his staff as Director of Civil (air) Activities for the War Department. In that capacity, I understand, he is to coordinate all civil aviation activities with the program of the Air Force.

Offices Offered

"Because of the acute office space problem in Washington, the Department of Commerce has offered General Connolly offices in the Commerce Building, convenient to the C. A. A. and the C. A. B., and he has accepted.

"Thus General Connolly will be charged with setting up the control office in the War Department which will govern, for the duration, all civilian flying.

"I feel all friends of civil aviation should appreciate the wisdom of General Arnold in appointing to this control task, even temporarily, a man who has such complete understanding of the needs and organization of civilian flying as has General Connolly. Out of my experience with him, I know that civil flying will get a square deal consistent with the country's needs. It will not get one iota more than that, but nobody at this time has a right to expect more. The only yardstick any of us must apply now is what will win the war at the earliest possible date."

Forecasting The Formation of Fog at Terminal Stations

By B. C. Haynes

Specialist in Meteorology

Safety Bureau

Fog is composed of minute water droplets in the lower part of the atmosphere. It differs from clouds only in its being near at the surface, thus restricting the visibility of an observer on the ground. The intensity or density of the fog is measured in terms of its transparency.

Light fog will allow visibility of five-eighths mile or more.

Moderate fog restricts the visibility to between five-sixteenths mile but not more than five-eighths mile.

Thick fog reduces the visibility to between one-fifth mile but not more than five-sixteenths mile.

When *dense fog* is present, objects are not visible at one-fifth mile. In this case visibility would be reported as one-eighth mile or zero.

Importance Recognized

The importance of fog has long been recognized by airmen. In regular operation of scheduled air carriers, it often becomes necessary to dispatch a flight under conditions favorable to or on the border-line of fog formation at the scheduled terminal airport and in these cases it becomes essential for the terminal station managers or dispatchers to observe accurately changes in the meteorological condition which may lead to rapid fog formation during the time the flight is en route.

A consideration of the detailed theories of fog formation leads to a few generalized rules which can be applied to the problem of forecasting fog formation during the next 1 or 2 hours.

Fog forms when the air becomes saturated in the lower levels, either by being cooled or through evaporation of warm rain falling through cooler air.

Cooling of the air is accomplished in two ways, first by contact with the ground which is cooled by radiation during the night and by expansion cooling when air blows up a sloping land surface.

Frontal Fog

Along fronts on the cold-air side, it is possible to have warm rain falling through the cold-air wedge. Evaporation from the raindrops produces a "supersaturated" condition of the cold air and the resulting recondensation produces the so-called frontal fog.

When fog forms there are several physical meteorological changes which can be noted by an observer on the ground.

Measurements of temperature and dewpoint give indications of the humidity conditions of the atmosphere. When the air becomes saturated, the temperature and the dewpoint have the same value and the relative humidity is 100 percent. Nighttime cooling will lower the temperature gradually but the dewpoint will usually not show much change. If an observer plots a graph showing temperature and dewpoint at 15-minute intervals, it is often possible to project the curves ahead and estimate the time of fog formation as the time the two curves are expected to cross.

Readings on the Ground

In order to obtain accurate information, the airline meteorologist or station manager should determine first, the location of the Weather Bureau's thermometer shelter which houses the psychrometer or wet- and dry-bulb thermometers. It is absolutely essential in the cases of ground fog formation that the readings of temperature and wet-bulb temperator be taken in a shelter located *on the ground* and not on top of a building. In cases where no shelter is located on the field the station should be equipped with a hand sling psychrometer. The station should also have a set of convenient psychrometric tables to convert temperature and wet-bulb readings into temperature and dew-point readings. (Tables may be obtained from the U. S. Weather Bureau, Washington, D. C.) For example, the dry-bulb temperature may read 60.0° F. and the wet-bulb temperature 58.0° F. This gives a wet-bulb depression of 2° F. and from the tables using an air temperature of 60° the *dew point* is found to be 57° *F.* It is important to read both wet- and dry-bulb thermometers to tenths of degrees, if possible, especially when the readings are close together.

It should be stated here that if the air does not gain or lose moisture, the dew point will remain constant as the temperature and wet-bulb temperature both fall. The wet-bulb temperature is always higher than the dew-point temperature except when saturation is reached, then the dry-bulb temperature, wet-bulb temperature, and dew-point temperature are all the same.

Saturated Air

When the air becomes saturated by evaporation of falling rain droplets into the air, the wet-bulb temperature will remain constant and the dewpoint will rise and the temperature will fall until they are all the same at which time the air is saturated.

Another element to watch during the early stages of fog formation is the visibility. As the relative humidity increases, the nuclei in the air begin to absorb moisture and actually form minute growing water particles. The increased size of the condensation nuclei makes the air less transparent to light and the visibility begins to decrease. As 100 percent relative humidity is neared (temperature and dewpoint are close together), the growth of the nuclei increases and water vapor in the air begins to condense out on the nuclei. At this point the visibility decreases very rapidly and a true fog condition exists.

The wind condition is a very important factor in considering the formation of radiation fog at night. When the wind is 5 miles per hour or above, there is only a slight chance of fog formation. If the wind is below 5 miles per hour this type of fog will not form. If the wind velocity is above 10 miles per hour, and the other favorable conditions of humidity and visibility are present, fog may be expected.

Frontal fogs, advection fogs and expansion fogs may form with higher wind velocities.

Radiation Fog

Sky cover is also important in forecasting radiation fog. The most ideal conditions for fog formation would be clear skies; however, fog may form with a high, thin overcast of cirrus clouds. With the lower types of clouds, especially those below 10,000 feet, the radiation cooling from the ground will be prevented and the surface temperature will not fall as far as on a clear night, thus preventing the temperature from reaching the dewpoint.

Radiation fog over a snow surface is rather rare especially at temperatures of from 23° F. to –5° F. There is some possibility of fog near the freezing point or from 23° F. to 32° F. or above. Below –5° F. there is a possibility of ice crystal fog forming over a snow surface.

Summary

The problem of fog forecasting from local observations has been studied for a number of years and the rules given above can be used for forecasts of one or two hours. Radiation fog and frontal fog are the only two types which form in the air over the station. In order to forecast expansion or upslope fog and advection or sea fog, it is necessary to know the general weather conditions as given on a synoptic weather map so that the air trajectory may be followed.

In order to forecast a radiation fog formation, observe the following:

1. *Sky.*—Clear or only high, thin clouds.
2. *Wind.*—Below 5 miles per hour.
3. Take readings of temperature and wet-bulb temperature at 15-minute intervals from a thermometer shelter lo-

(*See* Fog Forecasting, *page 41*)

C. P. T. Graduates Urged to Take Military Training

The Civil Aeronautics Administration has urged graduates of the Civilian Pilot Training Program to apply for further aviation training in the military services.

In a recent letter sent to C. P. T. graduates, Brig. Gen. Donald H. Connolly, former Administrator of Civil Aeronautics, pointed out that the graduates had pledged to apply for air training in the armed forces, if and when needed. "Both the Army and Navy Air Forces have given notice that more applicants are needed *now*," General Connolly said.

"The special training you already have received gives you a marked advantage in the competition for commissions and advancements," the letter continued. "In the Army primary training, for example, there are less than one-third as many washouts among C. P. T. trainees as among cadets who have not had your training."

That C. P. T. graduates already have flocked to the military services in large numbers is shown by a recent survey conducted by the Administration. This survey was in the form of a questionnaire sent to 20,000 graduates of the Elementary Course, but the results were projected for the entire group of 70,000 graduates.

Of the 70,000, it is estimated that 21,000 already are in some branch of the Army or Navy, and 3,000 have gone with England or Canada. Another 28,000 are still in college; 9,000 have entered some phase of civil aviation, instructors, etc., while the remaining 9,000 have entered other industries not directly connected with aviation.

The text of General Connolly's letter follows:

DEAR SIR: At the request of the Army and Navy Aviation Branches, I am writing to urge you to apply for further training in one air arm or the other.

Which service you enter is a matter of your own choice. This request is merely that you act upon your pledge, given at the beginning of your C. P. T. Course, to apply for air training in the armed forces, if and when needed. Both the Army and Navy Air Forces have given notice that more applicants are needed *now*.

The special training you already have received, gives you a marked advantage in the competition for commissions and advancements. In Army primary training for example, there are less than one-third as many "washouts" among C. P. T. trainees as among cadets who have not had your training.

Both Army and Navy aviation offer you training and experience in piloting the most modern high speed or heavy multiengine equipment, and in the use of the most advanced instruments. This, together with the administrative work required of officer personnel, will prepare you for responsible positions in the future.

You are, or soon will be, within the limits of the Selective Service Act. Before you are called into some branch of service less attractive to you, fulfill your pledge, and apply for this valuable training. Your exceptional qualifications are needed by your country *now*.

The enclosures explain how to apply.

Sincerely,

DONALD H. CONNOLLY,
Administrator of Civil Aeronautics.

Improvements in Military Planes Now Seen as Aid to Future Civil Aircraft

NACA Annual Report Tells Research Program

Improvements in large bombing planes of today will undoubtedly be reflected in transport airplanes of tomorrow and new and improved engine installations, wing forms, and propeller designs developed for military planes will help increase the speed and efficiency of future civil aircraft.

This prediction was made in the annual report of the National Advisory Committee for Aeronautics, transmitted by President Roosevelt to Congress on January 12. Following are excerpts from the report:

Powerful Influence

Against a background of fallen nations the airplane looms as the instrumentality that has changed previous concepts of military power and the course of history. In the emergency created by this situation, the United States is expending unprecedented sums for the production of aircraft, on the effectiveness of which the security of the Nation may largely depend.

Vast quantities of aircraft alone seem insufficient unless their performance is at least equal to those they may be called upon to oppose. This makes it essential to choose the most advanced designs for production, but allows little time to prove the new features incorporated. It falls to the aeronautical laboratories not only to provide the new ideas necessary to insure superior performance, but at the same time to prove in advance the soundness of the design as a whole. The Committee's work, therefore, falls into two principal categories, namely, research to furnish new ideas; and development, or the application of these ideas to curernt military designs. The present emergency has naturally revised the priorities in connection with the long-range research program, to the end that those things which give most immediate promise are emphasized. It has been possible, due to close collaboration with the Army, Navy, and aircraft industry, to incorporate the results of a great deal of the Committee's work in current production aircraft, thus making them more effective military weapons.

Only continued scientific research can give the Nation assurance that its aircraft will be kept at least the equal of those of any other nation. In order to develop aircraft to their full potentialities, both in peace and in war, scientific research must be prosecuted with vigor and imagination.

Relation to Civil Aviation

With the exception of dive-bombing problems and problems incident to armament installations, practically all of the research of the Committee is directly applicable to civil types of aircraft. Improvements in large two- and four-engine airplanes of the bombing type will undoubtedly be reflected in transport airplanes of tomorrow. New and improved engine installations, wing forms, and propeller designs developed for military types will be important factors in increasing the speed and efficiency of future civil aircraft.

Problems of Research

The desired characteristics of the naval and military types of aircraft now included in the national defense program are such that both fundamental and specialized research are necessary to realize the performance required.

The outstanding fighters of 1940–41—the British Spitfire and Hurricane airplanes and the German Messerschmitt 109F—had maximum speeds of the order of 360 miles per hour. The American aircraft program must provide new fighters for 1941–42 of much higher speed. A speed of 400 miles per hour and as much more as is practicable is an obvious necessity. The factors involved include not only clean aerodynamic design, but the discovery of new principles and facts whose application in design leads to real improvements. It is not enough merely to increase the horsepower and to smooth the surfaces.

It was necessary to develop a new wing section of low-drag type, to obtain accurate data in a low-turbulence wind tunnel of its lift and drag, to determine the effect of various types of flaps for increasing lift, and the action of normal and other lateral control devices. It was also essential to reexamine the method of cowling and cooling both air-cooled and liquid-cooled engines at high air speeds. Special cowlings were required to handle the air needed to cool the engine, the oil radiator, the intercooler and, in the liquid-cooled type, the radiator. This work was based on theoretical analysis and proved in wind-tunnel and flight tests.

(*See* NACA REPORT, *page 43*)

Board Indicates It Will Approve Travel-Card Plan

Approval of the Air Travel Card Plan and other special travel discounts, which have been under investigation, has been indicated by the Civil Aeronautics Board. The Air Travel Card Plan allows eligible subscribers a 15-percent discount on one-way air-transportation rates as a result of contract agreement involving a stated deposit by the subscriber and use of a minimum monthly amount of transportation. Under the Government Discount Provisions, included in the investigation, a 15-percent discount also is allowed on Government use of air transportation.

The Board found the discounts provided for by the plan to be generally in the public interest. Air travel, under the plan, accounts for approximately one-half the total passenger revenue of the industry.

"All elements considered," the Board said, "it has increased revenues beyond what they would have been without the plan. A large part of the transportation—would not have been sold except for the discount. It appears (to us) that there is no competitive relationship in the customary sense between the classes of traffic involved, that the reduced rates are reasonably open to all, that the Plan constitutes a convenience and benefit to a considerable part of the travelling public, that the interests of the carriers are reasonably protected, and that the difference in rates is not clearly improperly adjusted with reference to the actual savings and profit to the carrier flowing from the plan."

The Board, in suggesting modifications to the plan, will withhold final decision for 6 months. It is expected that the carriers will "agree upon and file such modifications of the inter-carrier agreement and tariffs as will effectually remove the objectionable features to which we have called attention." Listed among "objectionable features" were the present low minimum on use of the plan ($500 per year); discrimination against travel agents by not permitting them to use the plan; personal use of the plan by employes of subscribers; restriction against airlines' soliciting the subscribers of another line; lack of uniformity among companies in administration of the plan; failure of the lines in publishing complete plan contracts in tariffs; and possibility of abuse of the discount by Government employes.

Chicago-Atlanta Nonstop Approved

Approval of a nonstop operation by Eastern Air Lines, Inc., over Route No. 10 between Chicago, Ill., and Atlanta, Ga., that will speed up mail and passenger service, has been granted by the Civil Aeronautics Board.

Eastern had contended that such service would, among other things, assist in the more economical and effective use of equipment. The Board did not discuss whether this result would be accomplished but said:

"Our decision that the matter should not be dealt with in the present proceeding does not indicate lack of concern over the effect of nonstop flights of this length upon the efficiency with which aircraft are utilized. Under existing conditions, with air transportation performing a service of national importance, and with the demand for that service well in excess of the total accommodations offered, any course which results in reducing the effective load capacity of transport aircraft below their nominal maximum accommodation is inherently suspect. We propose to inaugurate inquiry into the justification for all such services of that character as now exist or may in the future be established."

Canal Zone Service Authorized for TACA

On the basis of national defense requirements, TACA, S. A. (Transportes Aerea El Salvador, S. A.) has been given a foreign air-carrier permit by the Civil Aeronautics Board, authorizing it to carry passengers, property and foreign mail between San Jose, Costa Rica, and Balboa, Canal Zone, subject to Presidential orders relating to the Zone. The authorization was approved by the President.

The carrier, which now operates as a foreign corporation organized under the laws of El Salvador, is a wholly owned subsidiary of TACA, S. A. of Panama, and its present service is principally within Costa Rica. On December 2, 1940, the Board granted the applicant exemption from the Executive order governing entrance of foreign and domestic aircraft into the Canal Zone, but at the request of the Zone authorities, the right to operate was not exercised. Under the Civil Aeronautics Act, it was necessary for the carrier to have a foreign permit and this was applied for. Pan American Airways, Inc., intervened.

Board Announces New Procedure In Rate Cases

The Civil Aeronautics Board has announced its new procedure in air mail rate cases, which considerably shortens and simplifies those formerly in use, in order to meet the necessity for expeditious action in matters contributing to the war effort.

Under this revised procedure, adopted as of January 8, after the carriers have been given chance to comment, action will begin with an order to show cause why the proposed rate or rates set forth therein on the basis of the facts presented should not be adopted. If the carrier has filed an application, the order will follow the application; in case the Board has initiated the proceeding, the order will begin it. All such proposed rates will be rates which seem to the Board to be reasonable but they will still be subject to further hearing and change if the carrier protests them.

If protest is made, an answer may be filed which may be supported by exhibits, briefs, and oral argument, as the carrier desires. A conference and a hearing may also be held. If no such protest is filed, the final handling of the case may take only a few days after issuance of the order.

Rate cases now pending before the Board are of three general classes: Those where hearings are complete; those where exhibits have been filed and hearing is in prospect; and all others. The first group will be completed under the former procedure; in the second there is optional choice; and in the third, as well as future cases, the new methods will be used.

—Keep 'Em Flying—

Pan-Am Permitted To Stop at Foynes

In an order issued by the Civil Aeronautics Board, Pan American Airways, Inc., was granted permission to include Foynes, Ireland, as a temporary stop on its North Atlantic routes between New York City and the terminal points, Marseilles, France, and London, England. The Board's order was approved by President Roosevelt.

Pan American's present certificate provides for routes from New York to Marseilles and London via Horta, the Azores, and Lisbon, Portugal; and via Shediac, New Brunswick and Botwood, Newfoundland.

By the temporary inclusion of Foynes as an intermediate stop between Botwood and London, and between Lisbon and London, national defense needs requiring air transportation to the British Isles in the immediate future will best be served, the Board stated.

Civil Air Patrol Purpose Stated By Commander

The purpose of the Civil Air Patrol, organized under the Office of Civilian Defense, is to conserve and utilize the civil aviation personnel and facilities not otherwise employed in commercial service or war effort, Maj. Gen. John F. Curry, national commander of the Patrol, told aviation editors at a recent conference in Washington.

"My experience to date with the Civil Air Patrol," he said, "convinces me that there is a great reserve of civil airmen and women, ready, willing, and able to render valuable assistance to the armed and civilian components of defense."

Blanks Distributed

General Curry announced that 300,000 application blanks and descriptive booklets had been distributed by national headquarters to the field offices of the Civil Aeronautics Administration, regional offices of the Office of Civilian Defense, State aviation commissions, and to more than 2,000 airports and 3,000 aircraft dealers, from whom they may be obtained by individual airmen wishing to enlist in the Civil Air Patrol.

Other portions of General Curry's statement follow:

These enlistment applications together with the necessary fingerprint cards and photographs are beginning to pour back into national headquarters, where they are checked and returned to the Wing Commanders for assignment to unit organization. My examination of these applications confirms the claims long made by civil airmen that a broad and valuable experience was available to the Nation in time of need.

Organization is progressing splendidly. The response in New Jersey and in New York is typical of that throughout the Nation. National Headquarters staff and the Regional Commanders will soon be ready for any tasks assigned.

Many Types of Service

The first two training directives are now ready for distribution to the forty-eight Wings. These directives will deal with basic military information, such as rank, courtesy, discipline, organization, strength, and kindred essential data. Following these will be the directives preparing the units for operation service, of the specialized nature required by war conditions. Through the chain of national command the federal authority will be able to utilize the Civil Air Patrol on a comprehensive basis for many types of service, national in scope.

However, although national in chain of command, the Civil Air Patrol is designed to serve State and local defense requests. Such requests through channels of the Chief Executive of the States or his defense organization will be honored by the Civil Air Patrol in every possible way.

These men and women of civil aviation have intimate knowledge of terrain and local conditions. They know aviation and bring a heartening devotion and enthusiasm to their work. They can fly for air-raid warning networks and searchlight batteries; they can fly courier missions and act as emergency transportation for officials or essential materials; they can operate as patrols outside combat areas and can search for lost aircraft and crews.

Designation of Medical Examiners

During the month of November 1941 the following-named physicians were officially authorized to make physical examinations for the Administration.

ILLINOIS.—Dr. Joseph C. Gustafson, 1601 Fifth Ave., Moline.
NEW MEXICO—Dr. Thomas L. Morgan, 118 East Taylor St., Hobbs.
PENNSYLVANIA—Dr. Philip R. Wiest, 150 North Sixth St., Reading.
SOUTH DAKOTA—Dr. Arthur W. Spiry, Mobridge Hospital, Mobridge.
PARAGUAY, SOUTH AMERICA—Major Ramon Doria, Flight Surgeon, Asuncion.

Airline Medical Examiners

Dr. Charles E. Moore, Twohy Building, 210 South First St., San Jose, Calif.
Dr. Laurence B. Dunn, 134 Abercorn St., Savannah, Ga.

Address Changes

The following-named medical examiners have changed their addresses during the month, their new addresses being as follows:

Dr. Martin J. Ryan, 631 Badgerow Building, Sioux City, Iowa.
Dr. Arthur B. Berresford, 608 East State St., Ithaca, N. Y.

Examinations Discontinued

The following physicians are no longer making examinations for the Administration.

Dr. E. B. Neff, Moline, Ill.
Dr. Samuel L. Miller, Cheboygan, Mich.
Dr. Paul C. Platt, Kansas City, Mo.
Dr. J. H. Summers, Lebanon, Mo.
Dr. Donald M. MacCornack, Gallup, N. Mex.
Dr. H. W. Hodde, Hobbs, N. Mex.
Dr. Wallace N. Davidson, Cushing, Okla.
Dr. Frank Lima, Mobridge, S. Dak.
Dr. Charles R. Woolwin, Blacksburg, Va.

Airline Medical Examiner

Dr. Paul C. Platt, Kansas City, Mo.

Secondary CPT Examiner

Dr. Paul C. Platt, Kansas City, Mo.

—Keep 'Em Flying—

December Designations

During the month of December 1941, the following named physicians were officially authorized to make physical examinations for the Administration.

CALIFORNIA—Dr. Harold J. Cooper, 1157 Fulton St., Fresno.
ILLINOIS—Dr. Raymond W. Kerwin, 310 South Michigan Blvd, Chicago.
MICHIGAN—Dr. Frederick C. Hayne, Cheboygan.
MINNESOTA—Dr. George J. Halladay, 712½ Laurel St., Brainerd.
MISSOURI—Dr. Avery P. Rowlette, 826 Themis St., Cape Girardeau; Dr. Barnard C. Trowbridge, 608 Commerce Building, Kansas City.
PENNSYLVANIA—Dr. Edwin R. Anderson, 220 Liberty St., Warren.
WASHINGTON—Dr. Frederick J. Miller, 455 Paulsen Medical and Dental Bldg., Spokane.

Airline Medical Examiners

Dr. Ivan A. Allred, 210 Medical Arts Bldg., Great Falls, Mont.
Dr. Frederick J. Miller, 455 Paulsen Medical and Dental Bldg., Spokane, Wash.
Dr. W. H. Mylar, Cheyenne, Wyo.

Address Changes

The following named medical examiners have changed their addresses during the month, their new addresses being as follows:

Dr. John G. Stubenbord, III, 45-35 Douglaston Parkway, Douglaston, N. Y.
Dr. James T. Colwick, 201 North 16th Ave., Durant, Okla.

Examinations Discontinued

The following physicians are no longer making examinations for the Administration:

Dr. Harry M. Grayman, Fresno, Calif.
Dr. Hubert W. Lee, Brainerd, Minn.
Dr. Frank W. Hall, Cape Girardeau, Mo.
Dr. Harold S. Callen, Bradford, Pa.
Dr. Quay A. McCune, Warren, Pa.
Dr. Ray C. Creelman, Bremerton, Wash.
Dr. Marion M. Kalez, Spokane, Wash.
1st Lieut. A. E. Nichols, Cuero, Tex.
Dr. R. Edward Smith, Kotzebue, Alaska.

Airline Medical Examiner

Dr. Marion M. Kalez, Spokane, Wash.

Army Air Corps Offers Meteorology Training

To meet an increasing demand for meteorologists in the Army Air Forces, the Air Corps is offering training in meteorology to a limited number of young men, the War Department has announced.

A candidate must be 20 to 27 years old, at least in his senior year at a recognized college, and must have specialized in the sciences or engineering. He will be appointed as an aviation cadet and upon completion of training will receive a commission as a second lieutenant, Air Corps Reserve, and be assigned to active duty.

Training will be given at Massachusetts Institute of Technology, the California Institute of Technology, New York University, University of Chicago, and University of California.

Airport Management—Problems Aired in Open Discussion

Journal Presents First Section Of Service Series

In the adjoining column there is reproduced a letter which was mailed recently to managers of municipal, commercial, and private airports in the continental United States.

The letter, which is self-explanatory, heralds the creation of a new "service" department in the CIVIL AERONAUTICS JOURNAL, devoted to airport management problems. The new department will appear in the JOURNAL once each month, according to present plans.

The complexity of present-day airport management presents a multitude of problems, some minor, many major. The Civil Aeronautics Administration hopes, by offering a regular section in the JOURNAL, to assist these managers in solving their problems.

It is an accepted fact that knotty questions in many cases go far to unraveling themselves when presented in the light of open discussion. This open discussion—a clearing house of problems, solutions, and ideas—is the paramount aim of the new department.

True enough, the problem confronting the manager of a large airport in the east and the manner in which he met it probably would not parallel the questions faced by a manager in a small middle-western city, but there are certain problems that in their particular aspect are Nation-wide.

The question of financing, of course, applies to all airports, whether large or small, municipal or private. Another that is almost universal is the question of hangar space, storing aircraft, charges, etc. By giving all managers the benefit of the successful experiences of a few, the JOURNAL hopes to perform a real service.

Management problems of many airports are directly connected in many cases with city and even State governments. Because the JOURNAL wishes to present a true and complete cross-section of opinion, the new page will be open to these officials, and any others interested or concerned with airport management. Cooperation from all is invited. Please address all communications directly to the CIVIL AERONAUTICS JOURNAL, Civil Aeronautics Administration, Washington, D. C.

That this idea will prove of great benefit to managers, however, is already indicated from the partial response that has been received. In the opposite column on this page is reprinted some of the comment expressed by airport managers in reply to the Administrator's letter.

—Keep 'Em Flying—

DEAR AIRPORT MANAGER: In a recent report on Financing Municipal Airport Operation, the American Municipal Association included the following under a section of the report devoted to a discussion of proposals for meeting airport management problems:

"Finally, of course, the Civil Aeronautics Administration will need the full cooperation of all airport managers throughout the country. Happily, their cooperation is now good. It can be made even better. For example, there is nothing which will bring home more effectively to the average airport manager the need for full cooperation in fact-collection than publication of collected facts. Thus, should the Civil Aeronautics Administration see fit to devote a page or so each month in the CIVIL AERONAUTICS JOURNAL to airport management problems, with emphasis on data showing how specific problems have been met, the response among airport managers would unquestionably be appreciative. Once an airport manager knows that the reports he sends in come back to him in a related and more useful form, his attitude toward answering the necessary questions will undergo a real change" (Report No. 143, p. 52).

This suggestion of the Association meets with the full approval of the Civil Aeronautics Administration. As you know, the Administration is ready and willing at all times to assist airport managers in the solution of their problems.

Steps are being taken within the Administration leading to the publication, as the Association suggests, of pertinent correspondence and data on the subject of airport management. However, the suggestion has been advanced that it would be a good idea to get at least a cross-section view of the feelings of airport managers themselves before action is taken on any concrete proposal, and that these views of the managers be incorporated in the final form the proposed department in the JOURNAL will take.

It is with this purpose that this letter is being written. Can we count on you to give us the benefit of your ideas, proposals, solutions to your own individual problems, etc., for use in the proposed new department? Will you tell us what you think of the idea and how we could best serve you?

Please comment freely on these points. If this proposal is to be of value, free and open comment will be necessary. Our decision on the proposal, and the method of approach, if the proposal is carried through, will depend on your expressions. May we have your answer as soon as possible?

Please address all correspondence directly to the CIVIL AERONAUTICS JOURNAL, Civil Aeronautics Administration, Washington, D. C.

Sincerely,

DONALD H. CONNOLLY,
Administrator of Civil Aeronautics.

Managers Commend Airport Page Idea; Pledge Cooperation

(Following are pertinent excerpts from answers to the recent letter requesting comment on the proposal to set aside a page in the CIVIL AERONAUTICS JOURNAL *which would be devoted to airport management problems. These represent only a cross-section of comment, since so many commendatory letters already have been received that space limitations preclude the use, or even mention, of all of them.)*

"Sounds like a good idea. Would especially like to know how much various airports are charging for the complete subleasing of various-size hangars—who pays for water, lights, heating, etc. How much, and by what means is the charge computed (i. e., gross weight, wing spread, wing area) do various fields charge for hangar space, (*a*) by the day? (*b*) by the week? (*c*) by the month?

"The answers to these and other questions should be obtained from fields that are showing an annual profit, even break, or minimum loss. Budgets of various-sized fields in different parts of the country should be shown; so that other fields may have a chance to see where they can put their operations on a sound financial basis. These should be split-up so that comparison can be made by the operator with other fields having similar opportunities for revenue (scheduled transports use field? based at field? C. P. T. operation at field? etc.), and having similar operation expenses (snow control, 24-hour lighting, etc.).

"Base your figures on profit-making fields, and when telling us who does what, let us know if he is doing it at a profit or not. We don't care what anybody does if he is losing money doing it."

James D. Mackay,
Field Manager,
Pocatello, Idaho

* * * * *

"It is a fine thing for a manager to go ahead on his own initiative, but a little knowledge of how others have solved their problems should help. Any kinks that one manager knows to be time or money savers can be passed on to the rest.

"Also there may develop some uniformity in charges to operators such as storage and landing fees, servicing, concessions, flying schools, and airlines.

"I believe there are an infinite number of ways in which the proposed project could help all of us in this line, and hope you see fit to carry it through."

Earl Gray, Airport Sup't.,
Great Falls, Mont.

* * * * *

(*See* AIRPORT LETTERS, *page 38*)

Airport Projects Approved

In accordance with the provisions of section 303 of the Civil Aeronautics Act, the Administrator of Civil Aeronautics has issued certificates of air navigation facility necessity, authorizing the expenditure of Federal funds in the operation of the following projects:

CALIFORNIA

Monterey, Municipal Airport (WPA)	$462,697

CONNECTICUT

New Haven, Municipal Airport (CAA–WPA)	351,346

FLORIDA

Jacksonville, Municipal Airport #2 (CAA–WPA)	492,484
Marianna, Municipal Airport (CAA–WPA)	270,413

IDAHO

Caldwell, Municipal Airport (WPA)	26,460

INDIANA

Terre Haute, Municipal Airport (WPA)	8,484

KANSAS

Hays, Municipal Airport (WPA)	[1] 10,928

MASSACHUSETTS

Hyannis, Hyannis Airport (CAA–WPA)	271,509

MINNESOTA

International Falls, Municipal Airport (WPA)	132,934

NORTH DAKOTA

Rugby, Municipal Airport (WPA)	68,717

NEW MEXICO

Raton, Municipal Airport (WPA)	184,293

NEW YORK

Buffalo, Municipal Airport (CAA–WPA)	[1] 661,630
Glens Falls, Floyd Bennett Field (WPA)	2,264
Massena, Municipal Airport (CAA–WPA)	300,507
New York, LaGuardia Field (WPA)	432,418

NORTH CAROLINA

Raleigh-Durham, Raleigh-Durham Airport (WPA–CAA)	631,454
Hickory, Municipal Airport (WPA)	122,229

OREGON

Astoria, Clatsop Airport (CAA–WPA)	55,900
LaGrande, CAA Intermediate Field Site 45A (CAA–WPA)	113,907

PENNSYLVANIA

Ebensburg, Keystone Airport (NYA)	3,780
Hazleton, Municipal Airport (WPA)	279,941

TEXAS

Conroe, Conroe Airport (WPA)	[1] 248,540

WASHINGTON

Bellingham, Whatcom County Airport (WPA)	72,828
Olympia, Olympia Airport (CAA–WPA)	286,075
Port Angeles, Clallam County Airport (WPA)	72,828
Pullman, Municipal Airport (WPA)	143,720
Seattle, King County Airport (WPA)	72,828

[1] This cancels and supersedes certificate for previous project.

– Keep 'Em Flying –

Bulletin Analyzes Airport Accidents Caused by Snow

A study of the airport snow hazard accidents and mishaps reported to the Safety Bureau for non-air-carrier flying for the winters of 1939–40 and 1940–41 has been issued in the form of a safety bulletin by the Civil Aeronautics Board.

Although only three of the airport snow accidents involved injury, all of which were minor, the aircraft damage was appreciable, the bulletin states. Of the 111 accidents reported, 15 aircraft received overhaul damage, 70 major assembly damage, and 26 minor damage. The following table shows these accidents and 96 mishaps broken down according to landing, take-off, and taxying:

	Accidents	*Mishaps*
Landings	62	28
Take-off	24	7
Taxying	25	61
Total	111	96

In 30 of the landing accidents aircraft nosed over because of snow on the airport, and in 24 accidents aircraft struck snowbanks, drifts, etc.

In 7 of the take-off accidents snow retarded the take-off; 8 accidents were caused by aircraft striking snowdrifts on the take-off; and 5 cases were reported of aircraft nosing over because of snow on the airport.

Of the taxying accidents, 9 involved the overturning of aircraft by wind because of snow on the airport; aircraft struck snowdrifts in 8 accidents and 13 mishaps; 3 accidents and 13 mishaps were caused by ice on the airport; and in 3 cases aircraft broke through crusted snow.

As a result of the study, the following suggestions are made in the bulletin:

1. Snow- or ice-covered runways should be regarded with great suspicion.
2. No objects such as wheel chocks and the like should be allowed to lie around on the airport where they may be covered and cause trouble.
3. Snow should not be piled in high banks bordering narrow runways or on airport approaches.

The bulletin concludes:

"It should be apparent that snow and ice are sure to create an additional problem to the pilot, not only on account of the obstruction and skidding hazard, but also because any smooth surface of even color makes it very difficult for the pilot to judge his altitude correctly. All of this calls for considerable extra caution on the part of the pilot when flying over snow-covered terrain."

Weather Bureau Airway Circular Available

The Weather Bureau has announced that the fifth edition of Circular N, INSTRUCTIONS FOR AIRWAY METEOROLOGICAL SERVICE, is now available. A shortage in the supply of the fourth edition during the past year made it impossible to furnish several hundred copies which were ordered.

At the request of a number of pilots whose flying activities are frequently conducted to and from points not served directly by Weather Bureau Airport Stations, the circular has been expanded to include sunrise and sunset tables and a table for converting to local standard time in order that these data may be computed by the pilot himself for any point in the United States.

Orders for personal copies of the new edition should be directed to the Superintendent of Documents, Washington, D. C., as the Weather Bureau is unable to furnish copies free of charge. The price of the edition is 65 cents, and to expedite the filling of orders, a check or money order, drawn in favor of Superintendent of Documents, should accompany the applications.

Aeronautical Charts

During December the following new editions of aeronautical charts were issued by the United States Coast and Geodetic Survey. Pilots are warned that the previous editions of the same charts are canceled and now are obsolete.

Regional and direction-finding (DF) charts are sold for 40 cents each, while sectional charts are 25 cents each. On orders grossing $10 or more, a 33⅓ percent discount is allowed. Copies of these charts may be obtained from the Coast and Geodetic Survey, Washington, D. C., and from recognized dealers at major cities and airports.

New Editions of Radio Direction Finding Charts

21DF.—October 1941. Size, 28 by 36 inches. Located in latitude 37°–49° N., longitude 102°–125° W., an area of about 987,000 square miles. Accumulation of changes since the last edition included.

22DF.—October 1941. Size, 34 by 25 inches. Located in latitude 38°–49° N., longitude 85°–108° W., an area of about 225,600 square miles. Changes accumulated since last edition included.

New Editions of Regional Aeronautical Charts

12–M.—November 1941. Size, 27 by 45 inches. Located in latitude 31°15′–38° N., longitude 99°–111° W., an area of about 311,000 square miles. Includes an accumulation of changes since the last edition.

(*See* AERO CHARTS, *next page*)

Airport Letters

(*Continued from page 36*)

"I would like to have the benefit of other manager's experience in locating breaks in high-tension underground cables, handling ice on runways, and many other problems."

John H. Tweed,
Airport Manager,
New Haven, Conn.

* * * * *

"Our field is a small one, with no night-flying facilities. As you know, in order to keep it open we must maintain a 24-hour guard. The amount of business that we do in the daytime does not warrant the extra expenditure of maintaining these guards. The manager, his paid assistant, and one voluntary assistant have been sworn-in as officers to examine pilots and planes as required by the C. A. A. However, these hours are long and difficult to expect of three people. Therefore:

"It occurred to us that in view of a listening post being maintained in our town by the town (lights, heat, and telephone) and the hours of watch being divided up by volunteers, that if we could get this listening post transferred to the airport, these same 'spotters' could be accomplishing two purposes at the same time (i. e., listening for aeroplanes and guarding the airport, at least in the off-hours of airport duties). Needless to say, it would be impossible to deputize all 'spotters.' However, the three of us who are deputized could be on call and get to the airport in not longer than 10 minutes. The airport would be glad to assume the cost of the lights, heat, and telephone, which would relieve the town of this obligation. Furthermore, the management of this airport could assist the 'spotters' in teaching them better methods of determining the direction airplanes are going, their altitude, and the type of plane they are reporting."

Edward F. Conklin,
Municipal Airport,
Gordonsville, Va.

(In reply to Mr. Conklin it was pointed out that present regulations require that a 24-hour guard need not be maintained at airports if the aircraft stored thereon have been rendered inoperative.

The problem of stationing "spotters" at airports to perform the double service of airport guards is one that must be worked out with local defense officials. Perhaps satisfactory local arrangements for such services can be worked out in many localities.—Ed.)

* * * * *

"To my mind the establishment of a question and answer department which would serve as a clearing house for individual problems we have to contend with, and the manner in which other managers have met these problems, would be of inestimable value. The writer has been connected with several other lines of endeavor in the past but has never experienced the difficulty in getting desired information that I have experienced in my present position. This is no doubt due to the comparative newness of the airport administrative problem."

Prince Woodberry, Manager,
Municipal Airport,
Beverly, Mass.

* * * * *

"I believe your Journal would be the ideal publication for the dissemination of ideas, proposals, and solutions to all our individual problems, and no doubt you will receive closer cooperation from the airport manager if these could be discussed through your publication rather than contact each individual manager whenever a problem arises within a certain community."

Francis W. Geng, Director,
Holman Field,
St. Paul, Minn.

* * * * *

"Your correspondence relative to devoting space in the CIVIL AERONAUTICS JOURNAL to airport management problems is timely and worth no little effort to put across. At the present time, all airports, both municipal and private, large and small, have the same type of problems to solve: That is, where do we fit in with the national defense effort?

"The review of reports received from various airport managers would be of the utmost value now and in the future to anyone who has an interest in the operation and maintenance of airports.

"My belief is that you can aid the various managers by securing their views on some of the proposed changes of aviation legislation; by discussion of defense necessities as they affect aviation. Various other conditions could very well be brought to the attention of airport managers which would result in the raising of standards for all types of airports."

A. F. Schachterle, Operator,
Perkiomen Valley Airport,
Collegeville, Pa.

* * * * *

"I think you should get all kinds of new ideas and methods of creating more good will at airports. Also, there are many little tricks of fixed-base operations that save money, time, and increase efficiency. Round-up these ingenious ways of doing things from all over the United States and present them for the benefit of all."

L. Whiting Babcock.

* * * * *

"New problems, as with all new industries, continue to arise, and I am sure that such a collection of these problems in the CIVIL AERONAUTICS JOURNAL will be of great aid in helping all airport managers to meet these problems."

R. J. Dunahoe, Jr.,
Manager, Woodrum Field,
Roanoke, Va.

* * * * *

Aero Charts

(*Continued from preceding page*)

Kenai.—November 1941. Size, 19 by 28 inches. Located in latitude 58°30′–61° 45′ N., longitude 145°–157° W., an area of about 90,000 square miles. Kodiak radio range and civil airways added.

Kuskokwim.—December 1941. Size, 18 by 22 inches. Located in latitude 57°30′–62°30′ N., longitude 157°–167° W., an area of about 125,000 square miles. Civil airways included in this edition.

Nome.—November 1941. Size, 24 by 34 inches. Located in latitude 62°–66°40′ N., longitude 154°–172° W., an area of about 190,000 square miles. Radio range added at McGrath and civil airways included.

New Editions of Sectional Aeronautical Charts

Del Rio.—November 1941. Size, 20 by 43 inches. Located in latitude 28°–30° N., longitude 99°40′–105° W., an area of about 52,000 square miles. Accumulation of changes since the last edition included.

Des Moines.—November 1941. Size, 20 by 43 inches. Located in latitude 40°–42° N., longitude 90°–96° W., an area of about 51,000 square miles. Includes realignment of Des Moines radio range, addition of a radio range at Iowa City, and addition of Civil Airway Blue No. 9.

Grand Canyon.—December 1941. Size, 20 by 44 inches. Located in latitude 36°–38° N., longitude 108°–114° W., an area of about 53,000 square miles. Changes accumulated since the last edition included.

Portland.—November 1941. Size, 20 by 33 inches. Located in latitude 46°–48° N., longitude 120°–125° W., an area of about 29,500 square miles. Accumulation of changes since the last edition included.

Sacramento.—November 1941. Size, 20 by 39 inches. Located in latitude 38°–40° N., longitude 120°–125° W., an area of about 40,800 square miles. Includes an accumulation of changes since the last edition.

San Diego.—December 1941. Size, 20 by 46 inches. Located in latitude 32°–34° N., longitude 114°–120° W., an area of about 55,000 square miles. North Beach radio range relocated, Santa Ana radio range deleted, and accumulation of changes since last edition included.

Seattle.—November 1941. Size, 20 by 32 inches. Located in latitude 46°–48° N., longitude 120°–125° W., an area of about 29,000 square miles. Radio range at Yakima and accumulation of changes since the last edition included.

Washington.—December 1941. Size, 20 by 33 inches. Located in latitude 38°–40° N., longitude 73°30′–78° W., an area of about 26,000 square miles. Civil airways revised and accumulated changes added.

"There are so many factors involved in attempting to solve a problem that might arise on one airport that it would be extremely hard to do anything more than tell the person who is seeking advice how that problem is handled on your particular airport. If that solution does not apply to the problem of the individual asking the question, then he can discard it.

"Fundamentally, it is my belief that this exchange of ideas of airport management is an excellent one, even as the exchange of ideas on the servicing of airplanes in our transport service has been an excellent one over a period of years. This latter has been the means of standardizing methods, resulting in greater efficiency and longer life of the airplanes with less accidents."

Dudley M. Steele, Manager,
Lockheed Air Terminal, Inc.
Burbank, Calif.

* * * * *

Ickes Calls for Increased Output Of Aviation Gas

Increased production from oil fields which yield the high-grade crude petroleum needed for aviation gasoline has been called for by Petroleum Coordinator for National Defense Harold L. Ickes.

His communication was directed to governors and petroleum regulatory agencies of the oil-producing States, and to the Coordinator's industry committee on production for the Pacific coast, where much high-grade crude is obtained.

It stipulated that the increased quotas for the high-grade crude be so arranged as to keep the total State quotas within the limits prescribed each month by the Coordinator's Office.

This may mean some decrease in production from some of the fields which yield lower-grade crude, in order to keep the total production within the limits considered necessary for an orderly national program.

The recommendation, made public by Deputy Coordinator Ralph K. Davies, said in part:

"It is essential, in the national interest, that the supplies of all grades of aviation gasoline for military, defense, and essential civilian uses be increased immediately to the maximum.

"A vast program of expansion of the facilities for manufacturing aviation grades of gasoline has been undertaken jointly by various agencies of the Government, together with the oil industry.

"To assure the successful accomplishment of this program, it is necessary that there be ready and adequate supplies of aviation grade crude petroleum and aviation gasoline components from the natural gas condensate and oil fields of each State to fill the demand of existing facilities and of additional facilities as they become available."

It is, therefore, recommended that, within the quotas recommended each month for each State, the allowable production of fields and pools shall be so fixed as to:

Makes Recommendations

"(*a*) Provide aviation grade crude petroleum to the full extent that such petroleum can be utilized for the produtcion of aviation gasoline to refineries that are actually utilizing their aviation gasoline refining facilities and their current supplies of aviation grade crude petroleum principally for the production of aviation grade gasoline for military purposes.

"(*b*) Provide increased allowables to the extent that the production can be utilized by additional aviation gasoline refinery capacity as it becomes available, to those fields capable of supplying such additional refinery capacity with aviation grade crude petroleum.

"(*c*) Encourage the efficient recovery of additional quantities of aviation grade gasoline components from natural gas condensate and oil fields of each State.

This new recommendation is the latest step in a comprehensive program, launched last summer by the Office of Petroleum Coordinator, to make ample supplies of aviation gasoline available when and where needed.

These steps have included the launching of a huge program of refinery construction and expansion, issuing of orders restricting the use of aviation gasoline components to essential purposes, expediting of priority applications for aviation gasoline plants, obtaining of agreement by patent owners to slash royalties on aviation gasoline processes, and mobilizing of the industry's leadership in the Petroleum Industry Council for National Defense.

Process Simplified

The Office of the Coordinator also has announced amendments to Recommendation No. 16, which centralizes control of aviation gasoline in that office. The amendments are designed to simplify and speed up the administration of the recommendation without sacrificing any of its important provisions.

Section 1504.15 now requires that a statement of the terms of all contracts and agreements for the production, storage, use, sale, or other disposition of aviation gasoline, base stocks, and blending agents be filed in this office. The amendment to this section would relieve from this requirement contracts and agreements with respect to production.

The reason for this amendment is that the refining division already has information concerning the more important production contracts and does not wish to have to handle or to burden the industry with the preparation of statements concerning hundreds of small and relatively unimportant contracts.

Section 1504.16 now requires antecedent notice of all action hereafter taken with respect to aviation gasoline, base stocks, and blending agents. The amendment relieves from this requirement action taken with respect to the production or storage of aviation gasoline, base stocks, and blending agents, and provides instead for subsequent notice thereof.

This amendment is considered necessary in order that there be no possibility of delay in increasing the production and storage of such materials. The amendment to this section also excepts from its provisions aviation gasoline of 85-octane rating or less produced by the addition of tetraethyl lead to a clear base stock of not more than 67-octane rating.

Priority Aid Given For Aircraft, Parts

The Civil Air Patrol has been given priority assistance to obtain civil aircraft, repair parts and accessories by an amendment to Supplementary Order P-6-a issued January 3 by the Director of Priorities. The expiration date of the order was extended from December 31, 1941, to March 31, 1942.

1-Month Extension

Another extension was that made from December 31 to January 31, 1942, in the preference rating orders granting priority assistance in obtaining materials used in the production of airplanes, airplane engines and equipment, electrical relays and solenoid assemblies, radio receiving, transmitting, and directional equipment. At the time of announcement, new orders were being prepared to replace those extended. In each case, the ratings are applicable only to materials to be used in filling defense orders.

Aid for Refinery

A high preference rating also has been assigned for materials to be used in the operation of a British refinery for aviation gasoline in the Caribbean area through a special order issued by the Director of Priorities. The Anglo-American Purchasing Co., New York City, has been granted use of the rating to obtain a specified list of materials.

—Keep 'Em Flying—

Aircraft Employment Continues Advance

Employment in the shipbuilding and aircraft industries continued to advance sharply during November 1941, according to an announcement of the Department of Labor. While the exact number of persons employed in the aircraft industry was not given, the trend was indicated by index numbers of employment and pay rolls.

The index number of aircraft employment for November 1941 was 9,643.7 percent of the 1923–25 average, compared with 9,174.8 percent for October 1941 and 4,402.3 percent for November 1940. Pay rolls showed an even greater increase, with the index number for November 1941 reported as 13,151.7 percent of the 1923–25 average, as against 12,-301.6 per cent in October 1941 and 5,012.9 percent in November 1940.

Danger in Leaving Dual Controls Operative Cited

The importance of disengaging all dual controls in a plane in which a private pilot takes up an uncertificated passenger was stressed in a recent safety bulletin issued by the Civil Aeronautics Board. Full text of the bulletin follows:

Is Your Plane Under Your Control—or Your Passenger's?

What did you do with your dual controls the last time you took up a passenger? Did you take out only the wheel but leave the rudder connected?

On July 1, 1941, at Moline, Ill., a passenger was injured fatally and the pilot seriously when the plane crashed to the ground as a result of rudder pedals pushed by the passenger. This accident could have been prevented—if the pilot had removed the dual rudder control.

The pilot thought he had complied with the Civil Air Regulations, section 20.616. However, this section will tell you that unless either the pilot holds the necessary certificate or the passenger is properly certificated, the passenger cannot occupy a control seat while the dual controls are operative. This applies to *all* dual controls!

ALL DUAL CONTROLS—*Rudder*, as well as *Stick* or *Wheel*, must be disengaged when the regulations require removal of duals!

INDIVIDUAL ACCIDENT REPORTS

Sailplane Pilot Injured

Steve Kecskes was seriously injured in a sailplane accident which occurred on April 6, 1941, at Camp Kearney Airport, San Diego, Calif. Kecskes did not hold any type of airman certificate but had approximately 140 hours' glider experience dating from 1929 and about 15 hours in powered aircraft. The sailplane, a Briegleb Model BG–6, had been purchased in kit form and assembled by the owner, Kecskes.

The pilot, making his fourth solo flight in a soaring type sailplane, was towed by a 1,000-foot cable attached to an automobile. The sailplane left the ground and climbed normally to an altitude of approximately 700 feet. The pilot then released the tow cable. The sailplane descended in a slightly banked right turn of 360° to an altitude of about 450 feet. It then entered another right turn which appeared nose-high. In this attitude it was stalled and fell into a right spin. Witnesses stated that after one and one-half turns the appearance of the spin changed, but the sailplane continued to spin for two more turns and then struck the ground on its right wing tip and finally came to rest on its nose.

Just prior to the take-off, Kecskes, aided by others, had pulled the sailplane about a quarter of a mile. When he started the flight he was very hot from this exertion and the temperature of the air at the time was high. No ventilators were installed in the sailplane and when the cockpit was closed all ventilation in the cockpit was thereby shut off. The take-off was in such direction that the sun shone directly on the pyralin cockpit cover and further augmented the heat in the cockpit. The pilot stated that shortly after dropping the tow cable he felt chilled and faint and experienced difficulty in breathing. He further stated that he lost consciousness at an altitude of approximately 400 feet.

Kecskes had never received instruction in spins.

Probable cause.—Pilot's loss of consciousness, resulting in an inadvertent stall from which recovery was not effected.

Contributing factor.—Lack of cockpit ventilation.

Sun Glare Handicaps Pilot

An accident near Willows, Calif., on May 19, 1941, resulted in fatal injury to pilot Darl A. DeNeal. He held a commercial pilot certificate with 1 Land, 28 Land, and instructor ratings and had accumulated approximately 2,255 flying hours. The aircraft, a Model B–4000 Travel Air, was completely destroyed.

The pilot was engaged in seeding a rice field near Willows. Upon completing his third swath across the field, flying toward the west, DeNeal followed his usual procedure, making a shallow left turn and then a wide right turn in order to cross the field again. As he turned, the flagmen at both ends of the field moved about 22 feet, in accordance with their established procedure, designating the next path over which the pilot was to fly. The position of the flagman on the western side of the field was in the lengthening shadows of trees which are located about 200 feet beyond the western boundary. When the pilot had straightened out from the right turn and was approaching the field from the west, he evidently saw that his alinement was improper and that he was south of the flagman on the western boundary of the field. In order to rectify this mistake, he began a wide left turn just after he had passed over the trees. During this turn, the flagman moved eastward, out of the shadows, in order to be more readily seen by the pilot. When the pilot began to straighten out from the wide left circle, he was again south of the proper course. He tightened his turn, apparently in order to swing into line, executing an extremely steep bank at an altitude of about 100 feet. The aircraft was stalled and fell off to the left. It made about one-half a turn in a left spin, struck the ground on its nose and landing gear, and burst immediately into flames.

Investigation disclosed no evidence of failure of the control system or structure during flight. There was ample fuel aboard and the engine had functioned normally until the time of impact. The fact that the pilot, when headed west, was flying directly toward the setting sun is believed to have augmented his difficulty.

Probable Cause.—Stall and spin at an altitude insufficient for recovery.

Contributing Factor.—Glare from sun.

Sharp Turn While Hedgehopping

Pilot Sterling Price Crawley was seriously injured and his passenger, Whitfield Miller, was fatally injured in an accident which occurred on May 31, 1941, approximately 10 miles south of Ranger, Tex. Crawley held a private pilot certificate with a class 1 Land rating and had a total of approximately 50 flying hours. The airplane, a Model BL–65 Taylorcraft, was demolished.

About 6 p. m., the pilot, accompanied by the passenger, took off from the Ranger Airport for a local nonrevenue flight. About 30 minutes later witnesses about 10 miles south of the town saw the airplane headed in a southerly direction and being flown below the level of a power line which was 30 feet high. The aircraft entered a right turn below the level of intervening trees and immediately afterward the witnesses saw dust fly up from the point at which the aircraft had struck the earth.

Subsequent investigation disclosed no evidence of failure of the control system or of the structure, or of malfunctioning of the engine. Both the ignition switch and the fuel valve were in the "on" position; the condition of the propeller indicated that the aircraft had struck the ground while the engine was developing power. The fuel was not exhausted. The dual controls were installed and operative. There were apparently no witnesses who saw the plane actually strike the ground. The evidence indicates that the pilot, while engaged in hedgehopping, inadvertently s t r u c k some bushes about 7 feet in height with the left wing tip, following which the aircraft dived to the ground.

Probable cause.—Action of the pilot in performing sharp turns at extremely low altitude.

Contributing factor.—Inexperience of the pilot.

Fire Destroys Aircraft

Carl R. Long was seriously injured in an accident which occurred on August 8, 1941, about 3 miles southwest of Tipton, Calif. Long held a commercial pilot certificate with class 1 Land and 2S Land and Instructor's ratings. He had accumulated a total of approximately 5,300 flying hours, of which 3,000 had been acquired in crop-dusting operations. The aircraft, a Model 4000 Travel Air, was destroyed by fire.

Long was engaged in dusting a cotton patch with sulfur dust. Flying at an altitude of about 10 feet above the cotton, he was about 500 feet from the end of his run, when he discovered that the aircraft had caught fire and was burning. He closed the throttle in order to land but was obliged to open it again to climb over wires ahead. He contacted the ground on the other side of the wires, cleared a ditch, and landed in an adjoining cotton patch. The plane rolled for about 200 feet, still burning, and came to a stop. The pilot got out and was subsequently treated for burns. The aircraft continued to burn until the fire was extinguished.

Subsequent investigation did not indicate that there had been any failure of the control system or of the structure or any malfunctioning of the engine. A witness stated that the fire started under the aircraft while it was in flight. The dust-releasing mechanism was made of metal and was not bonded electrically to the aircraft proper. The evidence indicates that the sulfur dust became ignited probably from a static discharge.

Probable cause.—A static discharge near the dust-emitting apparatus, resulting in fire.

Stalls on Steep Turn

Franklin E. Stewart, pilot, and Philip I. King, passenger, were fatally injured in an accident in Dixie Valley, Nev., on July 27, 1941. The pilot held a private pilot certificate with a class 1 Land rating and had accumulated approximately 40 flying hours. The passenger held a student certificate. The aircraft, a Model 8 Luscombe, was demolished.

On the day of the accident, the pilot and his passenger had flown from Dixie Valley to Frenchman Station, about 50 miles distant, to pick up a small package of mine-machinery parts weighing about 8 pounds. So far as is known both this flight and the return flight to Dixie Valley were uneventful until the accident occurred. When Stewart arrived over Dixie Valley he flew northward over the landing strip in order to attract the attention of friends who were to meet him on landing. He made a 180° turn, and flew south at an altitude of about 200 feet over the landing strip to a point about half a mile distant where he started a steep, tight, left turn. When about two-thirds of the turn had been completed, the aircraft was stalled and fell off to the left in a spin which continued until the aircraft struck the ground first on its left wing and nose, and then on its right wing.

Subsequent examination of the wreckage disclosed no evidence of failure of the control system or structure. The condition of the propeller indicated that the engine was developing considerable power at the time of impact. The site of the accident is approximately 3,400 feet above sea level and is at the base of a mountain range rising to about 9,900 feet. The wind was from the west of the mountains and was estimated at 10 miles per hour. Examination of the pilot's log book revealed that he had done very little flying since receiving his private pilot certificate on January 19, 1941.

Probable cause.—Failure of pilot to maintain sufficient flying speed during a turn at low altitude.

Take-Off From Small Field

Pilot Wilmer E. Ragsdale was seriously injured in an accident at Doe Run, Mo., on July 8, 1941. His passenger, George Watson, was slightly injured. Ragsdale held a commercial pilot certificate with a class 1 Land rating and had logged about 261 flying hours. The aircraft, a Taylorcraft, Model BL-12-65, received minor damage.

On a local pleasure flight, the pilot, accompanied by his passenger, took off from an alfalfa field into a gusty northwest wind of approximately 15 miles per hour. During the climb following take-off, the aircraft had travelled about 50 feet beyond the edge of the field and had reached an altitude of approximately 60 feet, when the bottom of the fuselage struck the tops of trees bordering the field. The plane then fell to the ground on its nose beyond the trees.

The evidence reveals that the field was only 600 feet long in the direction of take-off. There was no evidence of failure of the structure or control system or malfunctioning of the engine. The pilot stated that he encountered a down draft which forced him into the trees.

Probable cause.—Action of pilot in attempting a take-off from a field of inadequate size.

Low Altitude Stall

James R. Sample was seriously injured and Howell N. Klueppelberg was fatally injured in an accident which occurred on July 28, 1941, approximately 1 mile southeast of Vero Beach, Fla. Sample, the pilot, held a student certificate and had flown about 26 solo hours. Klueppelberg was uncertificated but had recently finished training at the Naval Air Station, Miami, Fla. The aircraft, a Model J-3 Piper, was extensively damaged.

Sample and Klueppelberg left the Vero Beach Airport and flew to Fort Pierce, Fla. There they landed and purchased gasoline. The aircraft was then taken off and flown back to Vero Beach. At a point about 1 mile southeast of the town the aircraft circled a residence at a very low altitude and the occupants waved to people on the ground. During the turn the aircraft was stalled. It fell off to the right and nosed into the ground.

No evidence of structural or mechanical failure was disclosed. The evidence indicated that Klueppelberg, who was seated in the front seat, was flying the aircraft, the dual controls of which were connected.

Probable cause.—Failure of pilot to maintain sufficient flying speed while maneuvering at low altitude.

Fog Forecasting

(*Continued from page 32*)

cated on the ground or by using a hand sling psychrometer (while standing on the ground at least 50 feet away from any building).

4. Reduce the wet- and dry-bulb readings to temperature and dewpoint.
5. Plot curves of temperature and dewpoint at 15-minute intervals.
6. Project curves ahead to time of intersection. This gives an estimate of time of fog formation.
7. Observe visibility and note decreases.

Forecasting Frontal Fog

In order to forecast frontal fog formation, observe the following:

1. Warm rain or drizzle falling into cold-air side of front.
2. Wind usually below 10 miles per hour.
3. Take temperature wet-bulb readings at 15-minute intervals.
4. Reduce temperature—Wet-bulb readings to temperature dewpoint readings.
5. Plot curves of temperature, wet-bulb temperature and dewpoint on graph paper at 15-minute intervals.
6. Project curves ahead to intersection which gives estimate of time of fog formation.

Likelihood of Occurrence

The early stages of ground fog formation may occur at relative humidities of 97 percent but is usually not observed as fog when the spread between temperature and dewpoint is greater than 40° F.

Radiation fog is more likely to form on a clear night after a cloudy day than on a clear night after a clear day.

In considering fog formation at any given airport, local topography must also be taken into account. Air drainage or downslope winds at night may cause changes in dewpoint and temperature which work against or together with the radiation processes. Some modification of the foregoing rules may therefore be necessary to make them directly applicable to your airport.

CIVIL AERONAUTICS BOARD

OFFICIAL ACTIONS

Abstracts of Opinions, Orders, and Regulations

FOR THE PERIOD JANUARY 1–15, 1942

ORDERS

ORDER No. 1466.....*January 2, 1942*

Suspended for 6 months student pilot certificate No. S–358898 held by Russell B. Nelson, Seattle, Wash., for piloting an aircraft carrying a passenger while not possessed of a valid pilot certificate, and other violations of the Civil Air Regulations.

ORDER No. 1467.....*January 2, 1942*

Suspended for 90 days student pilot certificate No. S–313086 held by Herman Lovett Arnsdorff, Savannah, Ga., for piloting an aircraft carrying a passenger other than a certificated instructor in violation of the Civil Air Regulations.

ORDER No. 1468.....*January 2, 1942*

Approved interlocking relationships contained in the applications of Pan American Airways Corporation and John O. Merckling.

ORDER No. 1469.....*January 2, 1942*

Authorized temporary holding of interlocking relationships by George B. Rice with Railway Express Agency and certain other companies.

ORDER No. 1470.....*January 3, 1942*

Authorized temporary adjustment of the rate of compensation for the transportation of mail by Transcontinental and Western Air, Inc., on route No. 44, pending final order of the Board in the proceeding to determine rates over routes Nos. 2, 36, 37, 38, and 44.

ORDER No. 1471.....*January 5, 1942*

Granted Transcontinental & Western Air, Inc., permission to inaugurate nonstop service between St. Louis, Mo., and Dayton, Ohio, on route No. 2, on January 5, 1942.

ORDER No. 1472.....*January 2, 1942*

Dismissed the complaint filed by the Administrator of Civil Aeronautics alleging violations of the Civil Air Regulations by Sally Elizabeth Knapp, whose certificate has since expired.

ORDER No. 1473.....*January 2, 1942*

Suspended, for 60 days and thereafter insofar as it authorizes the carriage of passengers, until such time as she shall satisfactorily complete a flight test with respect to emergency maneuvers, private pilot certificate No. 134498 held by Florence M. Steele, Seattle, Wash., for piloting an aircraft acrobatically without being equipped with a parachute in violation of the Civil Air Regulations.

ORDER No. 1474.....*January 6, 1942*

Suspended for 30 days private pilot certificate No. 76103–41 held by Newton H. Smith, Highland Park, N. J., for piloting an aircraft between the hours of sunset and sunrise when the aircraft did not show the proper lights for such operation.

C. A. B. Opinions

Another in the series of individually printed economic opinions of the Civil Aeronautics Board is now available. Copies may be obtained from the Superintendent of Documents, Government Printing Office, for 10 cents each.

The latest opinion to be printed is No. 38—Docket No. 1–406 (A)–1, BRANIFF AIRWAYS, INC.—MAIL RATE PROCEEDING.

ORDER No. 1475.....*December 24, 1941*

Granted the application of TACA, S. A., for a foreign air carrier permit authorizing the transportation of persons, property and mail between San Jose, Costa Rica, and Balboa, C. Z. (opinion and order—Docket No. 602) (signed by the President January 3, 1942).

ORDER No. 1476.....*December 19, 1941*

Authorized the issuance of a temporary amendment to the existing certificate held by Pan American Airways Co., authorizing air transportation between New York, N. Y., and Lisbon, Portugal, so as to include Foynes, Ireland, as an intermediate point (opinion and order—Docket No. 699) (signed by the President January 5, 1942).

ORDER No. 1477.....*January 9, 1942*

Revoked student pilot certificate No. S–222221, held by Hary Leff, Honolulu, T. H., for piloting an aircraft while under the influence of intoxicating liquor, and other violations of the Civil Air Regulations.

ORDER No. 1478.....*January 6, 1942*

Revoked air agency certificate No. 83, held by Aero Repair Station (Mid-Western-Aviation Corporation) for approving an aircraft as airworthy when it was in fact unairworthy, with the provision that it may apply for and be issued a new certificate if it demonstrates its competence to a representative of the Administrator (opinion and order).

ORDER No. 1479.....*January 6, 1942*

Affirmed the denial by the Administrator of Civil Aeronautics of the application of Jack Clayton London, Jr., for a commercial pilot certificate (opinion and order).

ORDER No. 1480.....*January 9, 1942*

Granted Pan American Airways, Inc., and Pan American-Grace Airways, Inc., leave to file a brief amici curiae in the matter of compensation for the transportation of mail by Canadian Colonial Airways, Inc.

ORDER No. 1481.....*January 9, 1942*

Suspended for 60 days, student pilot certificate No. S–182824, held by Truett Jones for piloting an aircraft at an altitude of less than 500 feet and other violations of the Civil Air Regulations (opinion and order).

ORDER No. 1482.....*January 9, 1942*

Suspended, insofar as it authorizes solo flight, until such time as he shall have received 4 additional hours of dual instruction and certified as competent for solo, student pilot certificate No. 2769 held by John Woosley, for flying a certificated aircraft in an unairworthy condition in violation of the Civil Air Regulations (opinion and order).

ORDER No. 1483.....*January 12, 1942*

Denied petition of American Export Airlines, Inc., for rehearing, reargument or reconsideration of the order of the Board (order Serial No. 1418) denying approval of its proposed acquisition of TACA, S. A.

ORDER No. 1484.....*January 13, 1942*

Suspended for 30 days student pilot certificate No. S–319837, held by Richard Cupp, Leipsic, Ohio, for performing acrobatics at an altitude of less than 1,500 feet in violation of the Civil Air Regulations.

ORDER No. 1485.....*January 13, 1942*

Revoked student pilot certificate No. S–226330 held by Ray Jones McFall, Van Nuys, Calif., for piloting an aircraft carrying a passenger other than a cer-

tificated instructor and other violations of the Civil Air Regulations.

ORDER No 1486_____*January 13, 1942*

Dismissed petition of Harold S. Vanderbilt and Eastern Air Lines, Inc., to reopen and reconsider order of the Board (Serial No. 852) disapproving interlocking relationships.

ORDER No. 1487_____*January 10, 1942*

Authorized issuance of an amended certificate of public convenience and necessity to Pan American Airways, Inc., authorizing temporary air transportation between New York and Lisbon via San Juan, P. R., Port of Spain, Trinidad, Belem, and Natal, Brazil, and Bolama, Portuguese Guinea. (Opinion and order—Docket No. 713.)

REGULATIONS

AMENDMENT 20-32_____*January 2, 1942*

Effective Jan. 2, 1942:

20.62 Private pilot.—A person possessed of a valid private pilot certificate shall not pilot for hire any aircraft carrying any person or property; nor pilot any aircraft in furtherance of a business except as an incident to his personal transportation: *Provided*, That this section shall not prevent such pilot from receiving remuneration by direction of the Government of the United States, or of any State or political subdivision thereof, for participation in official missions of the Civil Air Patrol or of any other recognized semimilitary organization, while a member of such organization.

REGULATION No. 200____*January 12, 1942*

Effective January 12, 1942:

Notwithstanding the provisions of Part 01 of the Civil Air Regulations, all airworthiness certificates the endorsement period of which would expire between January 1, 1942, and July 1, 1942, shall continue in effect and shall not require endorsement until 6 months after the date upon which the endorsement period would otherwise expire: *Provided*, That this special regulation shall not apply to scheduled air carrier aircraft.

Board Record

(*Continued from page 31*)

ried in aircraft and inspection of all cargo and baggage under strict control.

6. Permission for air carriers to fly off the Federal Airways if proper direction-finding devices are used.

7. Higher ceiling minimums and restriction of flight under icing conditions.

8. Certification of pilot ratings on the horsepower of their planes instead of on a gross weight basis.

9. Elimination of spiralling to landings on airports.

Technical Studies

Important technical studies are being carried on by the Safety Bureau of the Board; over 5,500 accident reports of all types have been handled and official investigation made of 824 serious accidents, including 28 public hearings, of which 11 concerned air-carrier accidents.

Economic studies published by the Board included: Definition of liability in aircraft accidents and recommendations for compulsory liability insurance by all classes of aircraft operators; issuance of a handbook on Aeronautical Statutes and Related Material; issuance of two airline traffic surveys, one analyzing traffic flow and the other characteristics of passenger traffic. Safety bulletins and studies were issued regularly. Among these were Snow Hazards on Airports, Engine Icing, Encountering Wind Shift on Landing, Resumption of Flight After a Forced Landing, Cold Weather Operation, Carburetor Icing and Prevention, Fuel Shut-off Valves, and Foreign Materials in the Induction System.

NACA Report

(*Continued from page 33*)

Propeller Efficiency

Propellers of usual design are inefficient at extreme speeds. New propeller blade sections and new plan forms for the blade have had to be developed to keep the losses under those conditions to a minimum. Again, theoretical studies and wind-tunnel tests together were necessary to arrive at a practical solution.

At high speed the airplane is subject to compressibility effects. The wing, the fuselage, the propeller, and other parts must be designed to eliminate compression waves as far as possible. This requires testing in a high-speed wind tunnel.

Altitude requirements have been much increased. They demand better supercharging equipment and better cooling of the engine and the intercooler at high altitudes.

In planning the design of a new military airplane special model tests are necessary to determine its spinning characteristics. Where the design is of a radically new form tests are also made in the free-flight tunnel to be assured that the design will have adequate stability and control.

Research Facilities

The Committee initiated its present program of expansion of research facilities in 1938. Through the support of the President and the Congress since that time, the Committee has been able to place in operation during the past year seven wind tunnels of major significance, and a structures research laboratory, all now fully engaged on urgent problems relating to the defense program. The new wind tunnels at Langley Field are a 20-foot free-spinning tunnel; a stability tunnel; a 2-dimensional tunnel; and a 16-foot high-speed tunnel. At Moffett Field the new tunnels so far placed in operation include a 16-foot high-speed tunnel, and two 7- by 10-foot high-speed tunnels.

There are under way at Moffett Field a low-turbulence high-speed tunnel, a supersonic tunnel, and a full-scale tunnel.

An aircraft engine research laboratory is under construction at Cleveland, Ohio.

—Keep 'Em Flying—

Board Order Extends Airworthiness Papers

In an attempt to ease the pressure of additional work placed upon Civil Aeronautics Administration inspectors by the war, the Civil Aeronautics Board has issued a regulation extending the endorsement period of airworthiness certificates, due to expire between January 1, and July 1, 1942, for 6 months.

Under previous regulation, aircraft were certified, upon inspection as to airworthiness, for a period of 1 year. The new regulation will not in any way relieve pilots from responsibility in keeping their planes in airworthy condition, the Board said, nor will it apply to air-carrier aircraft.

For the full text, see Regulation No. 200, on this page.

Pilot Training

(*Continued from page 29*)

minimum period of time prescribed by the Army and Navy for such enlistment or continue in Civilian Pilot Training if so directed.

"I further agree that if the plan is placed into effect during this training period with the Civilian Pilot Training requiring trainees to enlist in the armed forces on a deferred or reserve status, I will so enlist for the aforementioned period of time.

"I understand if I am eliminated from Civilian Pilot Training by Advisory Board action, such advice will be furnished to the State Director of Selective Service or to my local Selective Service Board for use in my reclassification."

—Keep 'Em Flying—

Artillery

(*Continued from page 29*)

"These planes will be used as elevated and movable observation stations," Col. R. E. Chandler, Office of the Chief of Field Artillery, said in discussing the program. "Carrying a pilot and observer, they will operate in the air approximately above our artillery positions, from which vantage point the observer will be able to adjust artillery fire. Both pilot-mechanic and observer will, of course, have training in field artillery.

"These planes must take off and land from all sorts of terrain, and the pilot-mechanic must be able to maintain his craft in the field just as the artilleryman takes care of his gun and motor vehicle. Average flights, we estimate, will be from 5 to 15 minutes in duration, after which the pilot will probably have to land and hide his plane."

The course will last for about six weeks. It will consist of 50 hours of flight training and 25 hours of ground study. If the success of the first class indicates expansion, some of the pilot-mechanics first trained may serve as instructors at other Field Artillery schools at Fort Bragg and Fort Roberts, on the West Coast.

Status of Parts of the Civil Air Regulations and Regulations of the Administrator of Civil Aeronautics

As of January 15, 1942

All persons affected by these Regulations, including those preparing for examinations for certificates may obtain required Parts of the Regulations from the Publications and Statistics Division, Civil Aeronautics Administration, Washington, D. C., without charge.

ONLY PARTS NEEDED SUPPLIED FREE

For example, *pilots* are governed in general by Parts 01., 20., 60., and 98.; *aircraft mechanics* by Parts 01., 04., 15., 18., 24., 98., and Section 60.32; and *aircraft engine mechanics* by Parts 01., 04., 13., 14., 18., 24., and 98. It should be remembered that individuals are entitled to receive free of charge only those portions of the Regulations which directly govern the activity in which they are engaged and this activity must be definitely stated when request is made.

HOW TO OBTAIN PARTS, AMENDMENTS, AND MANUALS

Those persons not affected by the Regulations, but desiring all or any part of the Regulations for other purposes, may obtain them as follows: Those Parts on which a price is listed in the tabulation below are on sale by the Superintendent of Documents, U. S. Government Printing Office (shown as G. P. O. in table), Washington, D. C., and are not available for free distribution except as stated in the first paragraph.

Eventually, all Parts will be placed on sale; meanwhile, Parts not yet on sale (carrying remark in tabulation below "order from C. A. A. only") may be obtained without charge from the C. A. A. upon demonstration of valid interest on the applicant's part.

ALL AMENDMENTS TO THE REGULATIONS, AND NOTICE OF NEW PARTS, ARE PRINTED IN THE CIVIL AERONAUTICS JOURNAL, AS RELEASED.

The tabulation below carries in the right-hand column the numbers of all effective amendments to each Part issued subsequent to its publication. Parts ordered from C. A. A. include all effective amendments, but when Parts are purchased from G. P. O. amendments must be requested separately from C. A. A.

Civil Aeronautics Manuals supplementing certain Parts with detailed interpretations of their respective provisions are issued. They are numbered the same as the Parts they supplement, and those Parts accompanied by Manuals carry appropriate notations. All Manuals are obtained from C. A. A. only, without charge.

PARTS CANCELLED AND UNASSIGNED

Cancelled Parts 00. and 03. now incorporated in Part 01.; cancelled Part 23. now incorporated in Part 51.; and cancelled Part 25. now incorporated in Part 24. Parts 90.–96., inclusive, cancelled. All other Part numbers not shown are unassigned.

Bound volumes of the complete Civil Air Regulations are no longer available. Parts and amendments are punched for filing in loose-leaf binders.

Civil Air Regulations

Part No.	Title	Date	Remarks	Price	Effective Amendments
	AIRCRAFT				
01	Airworthiness Certificates	11-1-41	Out of stock; to be available soon at C. A. A. and on sale at G. P. O.	$0.05	Spec. Reg. Ser. 200.
02	Type and Production Certificates	3-1-41	In stock at C. A. A. and on sale at G. P. O.	.05	
04	Airplane Airworthiness (Manual 04, 2-1-41 [1])	4-1-41	In stock at C. A. A. and on sale at G. P. O.	.15	116 129.
13	Aircraft Engine Airworthiness (Manual not Issued).	8-1-41	In stock at C. A. A. and on sale at G. P. O.	.05	
14	Aircraft Propeller Airworthiness (Manual 12-1-38.	11-15-40	In stock; order from C. A. A. only		
15	Aircraft Equipment Airworthiness (Manual 15, Out of Stock).	11-15-40	In stock; order from C. A. A. only		
16	Aircraft Radio Equipment Airworthiness (Manual, 2-13-41) [2].	2-13-41	In stock at C. A. A. and on sale at G. P. O.	.05	
18	Maintenance, Repair, and Alteration of Certificated Aircraft and of Aircraft Engines, Propellers, and Instruments. (Manual 18, 6-1-41.	6-1-41	In stock; order from C. A. A. only		
	AIRMEN				
20	Pilot Certificates	5-1-40	In stock at C. A. A. and on sale at G. P. O.	.05	63, 65, 67, 75, 82, 83, 87, 88, 99, 101, 107, 110, 111, 112, 115, 117, 118, 125, 126, 127, 20-22 thru 20-32.
21	Airline Transport Pilot Rating	11-15-40	In stock; order from C. A. A. only		87, 101, 115.
22	Lighter-Than-Air Pilot Certificates	9-15-41	In stock at C. A. A. and on sale at G. P. O.	.10	
24	Mechanic Certificates	5-1-40	In stock at C. A. A. and on sale at G. P. O.	.05	44, 61, 73, 75 87, 109.
26	Air-Traffic Control Tower Operator Certificates.	10-4-40	Out of stock; to be available soon at C. A. A. and on sale at G. P. O.	.05	87.
27	Aircraft Dispatcher Certificates	7-15-40	In stock at C. A. A. and on sale at G. P. O.	.05	74, 75, 87, 27-4.
	AIR CARRIERS				
40	Air Carrier Operating Certification	11-1-40	In stock at C. A. A. and on sale at G. P. O.	.05	85, 89, 102, 129, 133
	AIR AGENCIES				
50	Flying School Rating (Manual 50, 12-40 [3])	11-1-40	In stock at C. A. A. and on sale at G. P. O.	.05	87, 113, 50-3
51	Ground Instructor Rating	5-1-40	In stock at C. A. A. and on sale at G. P. O.	.05	75, 87, 128.
52	Repair Station Rating (Manual 52, 2-41)	5-1-40	In stock at C. A. A. and on sale at G. P. O.	.05	75, 84, 87.
53	Mechanic School Rating (Manual 53, 5-40)	9-15-40	In stock at C. A. A. and on sale at G. P. O.	.05	75, 87.
	AIR NAVIGATION				
60	Air Traffic Rules (Manual 60; Part 1, 12-1-40; Part 2, 8-1-40; Part 3, 12-1-40).	10-4-40	In stock at C. A. A. and on sale at G. P. O.	.10	80, 90, 93, 102, 104, 119. 120, 121, 127, 135, 60-25 thru 60-43 60-44 thru 60-50, Spec. Reg. Ser. 177.
61	Scheduled Air Carrier Rules	1-1-41	In stock at C. A. A. and on sale at G. P. O.	.05	91, 94, 97, 102, 115, 120, 122, 129, 130, 132, 134 61-17, 61-18, 61-19, Spec. Reg. Ser. 182, 188, 192.
66	Foreign Air Carrier Regulations	[4] 1-15-42	In stock; order from C. A. A. only		
	MISCELLANEOUS				
98	Definitions	11-15-40	In stock; order from C. A. A. only		
99	Mode of Citation of Regulations	11-15-40	In stock; order from C. A. A. only		

Regulations of the Administrator

300	Designation of Civil Airways	6-1-41	In stock: order from C. A. A. only		1.
501	Aircraft Registration Certificates	11-1-41	In stock; order from C. A. A. only		
510	General Regulations, Washington National Airport.	9-26-41	In stock; order from C. A. A. only		
511	General Aeronautical Rules for the Washington National Airport.	9-26-41	In stock; order from C. A. A. only		
525	Notice of Construction or Alteration of Structures on or Near Civil Airways.	11-1-41	In stock; order from C. A. A. only		
531	Seizure of Aircraft	12-8-41	In stock; order from C. A. A. only		

[1] Amendment as issued by C. & I. Div. Release 50, 6-3-41.
[2] Amendment No. 1 issued as S. R. Release No. 62, 8-12-41.
[3] Amendment 4-14-41 issued as S. R. Release No 77, 11-13-41.
[4] Effective date suspended until 3-1-42 by Order No. 1490.

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